EPA Appendix F - Risk Assessment #5:

Comment:

Table 4-2: Footnote "a" states that screening levels used in the risk evaluation are from the EPA Region 9 screening tables. Please note that the Region 9 screening levels were replaced in September 2008 by the EPA Regional Screening Levels. The most recent update of the screening levels took place in May 2010. Consequently, several of the risk-based screening levels presented in this table are no longer appropriate for use and should be replaced with the most current values. The current screening tables can be found online at:

http://www.epa.gov/reg3hwmd/risk/human/rbconcentration table/Generic Tables/index.htm

Also, EPA is currently conducting reassessment of hexavalent chromium under the IRIS program (EPA, 2010a). Hexavalent chromium has been considered to be carcinogenic by the inhalation route of exposure for a number of years. However, recent studies have shown that hexavalent chromium should be considered to be carcinogenic by the oral route of exposure as well (NIH, 2007). Furthermore, it appears that hexavalent chromium's carcinogenicity is associated with a mutagenic mode of action (McCarroll, et. al., 2009). EPA currently considers the oral cancer slope factor of 0.5 (mg/kg-d)-l developed by the state of New Jersey to be a Tier 3 value (EPA, 2003 and 20l0b). EPA has recently updated its Regional Screening Tables taking this information into account as well as the mutagenic mode of action and is now recommending screening levels for hexavalent chromium of 0.29 mg/kg in residential soil, 5.6 mg/kg in industrial soil, and 0.043 μg/l in tap water. These new screening levels emphasize the need for chromium sampling to report the results for both trivalent and hexavalent chromium rather than simply a value for total chromium. In order to be conservative, in the absence of hexavalent chromium data, EPA Region 7 will consider all total chromium results to represent hexavalent chromium concentrations (EPA, 2010b). Thus, chromium in this table should be identified as another COPC in the initial contaminant screening process.

Discussion:

The requested changes have been made to Table 4-2. Chromium has been added to the COPC list. Changes in the uranium toxicity screening value result in uranium toxicity being screened out. Individual isotopes of uranium are retained as carcinogens in the new screening table. Aroclor 1254 has also been added to the list of COPCs.

Proposed Text Changes:

"The BRA also performed a toxicity screen of the chemicals that were reported at the Site. This toxicity screen has been updated to account for changes that have occurred since publication of the BRA. Table 4-2 presents the concentrations used in the screening evaluation and the results.

Table 4-2 Summary of Chemical Toxicity Screen for Surface Soil

Analyte	Risk- or HI-Based Industrial Screening Values [a] (mg/kg)	Maximum Soil Concentrations [b]		Selection/Screening of COCs in Soils [c]		Screening Result Changed from Baseline?
		Area 1 (mg/kg)	Area 2 + Boundary (mg/kg)	Area 1 0-1 ft	Area 2 + Boundary 0-1 ft	
Inorganic Chemicals						
Arsenic	$1.60x10^{00}$	220	35	**YES**	**YES**	no
Beryllium	$2.00x10^{03}$	3.3	2.2 [f]	no	no	no
Cadmium	$8.00x10^{02}$	7.9	6.3 [f]	no	no	no
Chromium (VI)	$5.60x10^{00}$	31	49 [f]	**YES**	**YES**	**Added**
Copper	$4.10x10^{04}$	2,300	360	no	no	no
Lead	$8.00x10^{02}$	320	2,200	no	**YES**	no
Mercury	$3.40x10^{01}$	0.17	0.27	no	no	no
Nickel	$2.00x10^{04}$	3,600	680	no	no	no
Selenium	$5.10x10^{03}$	250	38	no	no	no
Thallium	$1.40x10^{01}$ [d]	1.2	nr [e]	no	no	no
Uranium	$3.10x10^{03}$	437.5	875	no	no	**Deleted**
Zinc	$3.10x10^{05}$	120	400 [f]	no	no	no
Organic Chemicals						
Acetone	$6.30x10^{05}$	0.034	0.038	no	no	no
Bis(2-ethylhexyl) phthalate	$1.20x10^{02}$	7.8	77	no	no	no
Di-n-octylphthalate	$1.80x10^{03}$ [d]	3	12	no	no	no
1,4-Dichlorobenzene	$1.20x10^{01}$	0.042	0.0065	no	no	no
Fluoranthene	$2.20x10^{04}$	nr	8.5	no	no	no
Xylenes	$2.70x10^{03}$	0.037	0.012	no	no	no
Pesticides/PCBs						
Aldrin	$1.00x10^{-01}$	nr	0.0017	no	no	no
Aroclor-1254	$7.40x10^{-01}$	1.1	1.6	**YES**	**YES**	no
4,4'-DDD	$7.20x10^{00}$ [d]	nr	0.0076	no	no	no
4,4'-DDT	$7.00x10^{00}$	nr	0.0094	no	no	no

[a] Unless otherwise noted, values are from http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/, February 21, 2011. When carcinogenic (risk) and non-carcinogenic (hazard) based screening levels were given for a constituent, the lower of the two was selected.

[b] From Table A.2-1 of the BRA (Auxier 2000)

[c] "YES" signifies that the analyte was selected for quantitative risk evaluation, "no" signifies that analyte was not selected for quantitative risk evaluation.

[d] Value from BRA, no updated information identified.

[e] nr = not reported

[f] Measured on the former Ford property (current Buffer Zone and Crossroad Lot 2A2 properties) before surface grading were performed by the adjacent property owner.

Chromium VI has been added to the list of COCs because its maximum reported concentration exceeds the current published screening level of 5.6 mg/kg.[1] The current screening level published for elemental uranium has increased since publication of the BRA. The maximum concentration of elemental uranium is now below the current EPA Regional Screening Level of 3,100 mg/kg and elemental uranium has been removed from non-carcinogenic evaluations (individual isotopes of uranium remain as COCs because they are radiocarcinogens)."

[1] http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/